I CLAIM:

1. An ink jet printhead chip which comprises:

a substrate that incorporates drive circuitry,

a plurality of nozzle arrangements positioned on the substrate, each nozzle arrangement comprising

nozzle chamber walls that define a nozzle chamber and an ink ejection port in fluid communication with the nozzle chamber, the nozzle chamber being in fluid communication with an ink supply channel through the substrate for supplying the nozzle chamber with ink;

a closure that is operatively positioned with respect to the ink supply channel, the closure being displaceable between a closed position in which the closure closes the ink supply channel and an open position in which ink is permitted to flow into the nozzle chamber; and

an actuator that is connected to the drive circuitry and the closure so that, on receipt of an electrical signal from the drive circuitry, the actuator can act to displace the closure between the closed and open positions;

an ink reservoir in fluid communication with each ink supply channel; and

a source of oscillating pressure that imparts an oscillating pressure to ink in the reservoir, so that, when the closure is displaced into the open position, a drop of ink can be ejected from the ink ejection port.

2. A printhead chip as claimed in claim 1, in which each actuator is elongate and is anchored at one end to the substrate, the actuator being shaped so that, in a rest condition, the actuator encloses an arc, the actuator including a heating portion that is capable of being heated on receipt of an electrical signal to expand, the heating portion being configured so that, when the portion is heated, the resultant expansion of the portion causes the actuator to straighten at least partially and a subsequent cooling of the portion causes the actuator to return to its rest condition thereby displacing the closure between the closed and open positions.

3. A printhead chip as claimed in claim 2, in which each actuator includes a body portion that is of a resiliently flexible material having a coefficient of thermal expansion which is such that the material can expand to perform work when heated, the heating portion being positioned in the body portion and defining a heating circuit of a suitable metal.

4. A printhead chip as claimed in claim 3, in which the heating circuit includes a heater and a return trace, the heater being positioned proximate an inside edge of the body portion and the return trace being positioned outwardly of the heater, so that an inside region of the body portion is heated to a relatively greater extent with the result that the inside region expands to a greater extent than a remainder of the body portion.

5. A printhead chip as claimed in claim 4, in which a serpentine length of said suitable material defines the heater.

6. A printhead chip as claimed in claim 3, in which the body portion is of polytetrafluoroethylene and the heating circuit is of copper

7. A printhead chip as claimed in claim 3, in which each actuator defines a coil that partially uncoils when the heating portion expands.

8. A printhead chip as claimed in claim 1, in which the actuator and the closure are positioned within the nozzle chamber.